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Peter J Slikkerveer

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EXAMINER

NGUYEN, LAUREN

ART UNIT

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2871

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/535,753	Applicant(s) SLIKKERVEER ET AL.	
	Examiner LAUREN NGUYEN	Art Unit 2871	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 06 April 2009.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,6,7,18,21-24,27-29 and 32 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,6,7,18,21-24,27-29 and 32 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Arguments

1. Applicant's arguments, see pages 9-12, filed on 04/06/2009, with respect to the rejection(s) of claim(s) 1, 6-7, 18, 21-24, 27-29, and 32 under 35 U.S.C. 102(b) as being anticipated by **Masahide et al. (JP 2002-014359)**, **Oshikawa (US 5,273,475)**; under 35 U.S.C. 103(a) as being unpatentable over **Masahide et al. (JP 2002-014359)** in view of **Hashimoto et al. (US 2002/0003711)**, and **Oshikawa (US 5,273,475)** in view of **Hashimoto et al. (US 2002/0003711)** have been fully considered and are persuasive. Specifically, none of the cited references teaches the limitations "the additional film is thicker at the edge than away from the edge". This claim language implies a comparison of the thicknesses of the film with the thickness measured in the normal direction, perpendicular to the plane of the film. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of **Wakita et al.**

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. **Claims 1, 6-7, 18-19, 22-24, 27** are rejected under 35 U.S.C. 103(a) as being unpatentable over **Masahide et al. (JP 2002-014359)** in view of **Wakita et al. (US 5,307,190)**.

4. Regarding **claim 1**, **Masahide** (figures 11-12) discloses a method of manufacturing a curved flat panel display device, comprising the act of:

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- providing two films including a first non-precurved film and a second non-precurved film (P1 and P2);
- pre-tensioning the second non-precurved film by a force (using pump P or the stage 41) to form a pre-tensioned surface (P1);
- adhering the first non-precurved film (P2) to the pre-tensioned surface; and
- releasing the force to contract the pre-tensioned surface and form a curved surface of the curved flat panel display device (In order to use the LCD device or perform the next manufacturing step (stress relief heat treatment, figure 7, see at least paragraph 0197), the exhaust air pump P or the stage 41 has to be taken out of the curved LCD after its formation. Therefore, the force is released);
- wherein one of said two films is a display layer exhibiting display functionality (P1 or P2, see at least paragraph 0180) and another of said two films is an additional film; said additional film is arranged substantially along an edge of the display layer (P1 and P2, figure 12); and

5. **Masahide et al.** does not disclose the remaining limitations of **claim 1**. **Wakita et al.** (in at least column 2, lines 7-19, figure 8) teaches the additional film (70) is thicker at the edge than away from the edge. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the film as taught by **Wakita et al.** because such modification would effectively protect the device against a mechanical shock, reduce the thickness of the display device, and decrease the manufacturing costs.

6. Regarding **claim 6**, **Masahide** (figures 11-12) discloses said additional film is arranged to be adhered to one of an intended I inner or outer side of the curved flat panel display (P1, P2).

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7. Regarding **claim 7, Masahide** (figures 11-12) discloses said adhering of the additional film to the display film is done by means of laminating (see at least paragraph 0192).

8. Regarding **claim 18, Masahide** (figures 11-12) discloses a method of manufacturing a curved flat panel display device, comprising the step of: providing a first film (P1), applying a force to the first film to form a pre-tensioned surface (using pump P or the stage 41) to form a pre-tensioned surface (P2); adhering the second film (P2) to the pre-tensioned surface of the first film (P1); and releasing the force to contract the pre-tensioned surface and form a curved surface of the curved flat panel display device (In order to use the LCD device or perform the next manufacturing step (stress relief heat treatment, figure 7, see at least paragraph 0197), the exhaust air pump P or the stage 41 has to be taken out of the curved LCD after its formation. Therefore, the force is released).

9. Regarding **claim 22, Masahide** (figures 11-12) discloses the step of applying the force comprises the step of applying a bending force to bend the second film to a position for the adhering step to adhere the second film to the surface of the first film (see at least paragraph 0193).

10. Regarding **claim 23, Masahide** (figures 11-12) discloses the additional film is arranged to be adhered to one of an intended inner or outer side of the curvature of the curved flat panel display device (P1 and P2).

11. Regarding **claim 24, Masahide** (figures 11-12) discloses said adhering of the additional film to the display film is done by means of laminating (N, see at least paragraph 0192).

12. Regarding **claim 27, Wakita et al.** (figure 8) teaches a thickness of said additional film is selected to shift a plane of substantially zero tensile or compressive stress of the curved flat panel display device upon bending of the curved flat panel display device to a desired plane.

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13. **Claims 1, 6-7, 18-19, 21, 23-24, 27-29, 32** are rejected under 35 U.S.C. 103(a) as being unpatentable over **Oshikawa (US 5,273,475)** in view of **Wakita et al. (US 5,307,190)**.

14. Regarding **claim 1**, **Oshikawa** (figures 1-5) discloses a method of manufacturing a curved flat panel display device, comprising the act of:

- providing two films including a first non-precurved film and a second non-precurved film (20 and 30);
- pre-tensioning the second non-precurved film by a force to form a pre-tensioned surface (20; see at least column 2, lines 45-68 and column 3, lines 1-25);
- adhering the first non-precurved film (30) to the pre-tensioned surface; and
- releasing the force to contract the pre-tensioned surface and form a curved surface of the curved flat panel display device (20; see at least column 2, lines 45-68 and column 3, lines 1-25)
- wherein one of said two films is a display layer exhibiting display functionality (20 or 30) and another of said two films is an additional film said additional film is arranged substantially along an edge of the display layer (20 or 30); and

15. **Oshikawa** does not disclose the remaining limitations of **claim 1**. **Wakita et al.** (in at least column 2, lines 7-19, figure 8) teaches the additional film (70) is thicker at the edge than away from the edge. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the film as taught by **Wakita et al.** because such modification would effectively protect the device against a mechanical shock, reduce the thickness of the display device, and decrease the manufacturing costs.

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16. Regarding **claim 6, Oshikawa** (figures 1-5) discloses said additional film is arranged to be adhered to one of an intended inner or outer side of the curved flat panel display (20 or 30).

17. Regarding **claim 7, Oshikawa** (figures 1-5) discloses said adhering of the additional film to the display film is done by means of laminating (see at least column 2, lines 45-68 and column 3, lines 1-25).

18. Regarding **claim 18, Oshikawa** (figures 1-5) discloses a method of manufacturing a curved flat panel display device, comprising the step of: providing a first film (20), applying a force to the first film to form a pre-tensioned surface to form a pre-tensioned surface (20; see at least column 2, lines 45-68 and column 3, lines 1-25); adhering the second film (30) to the pre-tensioned surface of the first film (20); and releasing the force to contract the pre-tensioned surface and form a curved surface of the curved flat panel display device (see at least column 2, lines 45-68 and column 3, lines 1-25).

19. Regarding **claim 21, Oshikawa** (figures 1-5) discloses the step of applying the force comprises the step of uni-axially stretching the first film (20 and 30; see at least column 2, lines 45-68 and column 3, lines 1-25).

20. Regarding **claim 23, Oshikawa** (figures 1-5) discloses the additional film is arranged to be adhered to one of an intended inner or outer side of the curved flat panel display (20 or 30).

21. Regarding **claim 24, Oshikawa** (figures 1-5) discloses said adhering of the additional film to the display film is done by means of laminating (see at least column 2, lines 45-68 and column 3, lines 1-25).

22. Regarding **claim 27, Wakita et al.** (figure 8) teaches a thickness of said additional film is selected to shift a plane of substantially zero tensile or compressive stress of the curved flat panel display device upon bending of the curved flat panel display device to a desired plane.

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23. Regarding **claim 28**, **Oshikawa** (figures 1-5) discloses a method of manufacturing a curved flat panel display device, comprising the act of:

- providing two films including a first non-precurved film and a second non-precurved film (20 and 30);
- pre-tensioning the first non-precurved film by a force to form a stretched film (20; see at least column 2, lines 45-68 and column 3, lines 1-25);
- adhering together the stretched film and the second non-precurved film so that the two films are held in a curved shape by the adhering act (20 and 30; see at least column 2, lines 45-68 and column 3, lines 1-25); and
- releasing the force to contract the stretched film and form a curved surface of the curved flat panel display device (end the thermal expansion process);
- the stretched film is arranged substantially along an edge of non-precurved second film (20 and 30).

24. **Oshikawa** does not disclose the remaining limitations of **claim 28**. **Wakita et al.** (in at least column 2, lines 7-19, figure 8) teaches the additional film (70) is thicker at the edge than away from the edge. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the film as taught by **Wakita et al.** because such modification would effectively protect the device against a mechanical shock, reduce the thickness of the display device, and decrease the manufacturing costs.

25. Regarding **claim 29**, **Oshikawa** (figures 1-5) discloses the act of pre-tensioning the non-precurved first film comprises the act of uni-axially stretching the non-precurved first film (20 and 30; see at least column 2, lines 45-68 and column 3, lines 1-25).

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26. Regarding **claim 32, Wakita et al.** (figure 8) teaches a thickness of said additional film is selected to shift a plane of substantially zero tensile or compressive stress of the curved flat panel display device upon bending of the curved flat panel display device to a desired plane.

27. **Claim 21** is rejected under 35 U.S.C. 103(a) as being unpatentable over **Masahide et al.** in view of **Wakita et al.**; further in view of **Yamamoto et al. (US 4,592,623)**.

28. Regarding **claim 21, Masahide et al. as modified by Wakita et al.** discloses the limitations as shown in the rejection of **claim 18** above. However, **Masahide et al. as modified by Wakita et al.** fails to teach the limitations of **claim 21**. **Yamamoto et al.** (in at least column 5, lines 31-34) teaches the step of applying the force comprises the step of uni-axially stretching the first film. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the method of manufacturing a curve flat panel display device of **Masahide et al. as modified by Wakita et al.** with the uniaxially stretch method of **Yamamoto et al.** because such modification would impart the corrosion resistance against chemicals to the films.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be

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calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Lauren Nguyen whose telephone number is (571) 270-1428. The examiner can normally be reached on M-Th, 7:30-6:00 EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Nelms can be reached on (571) 272-1787. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/L. N./

Examiner, Art Unit 2871

/Andrew Schechter/

Primary Examiner, Art Unit 2871